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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

# Office Action Summary

**Application No.**

10/551,365

**Applicant(s)**

TSUCHIDA ET AL.

**Examiner**

LIXI CHOW

**Art Unit**

2627

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-22 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-22 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 28 September 2005 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/CDC)
- 4) ☐ Interview Summary (PTO-413)
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_
- Paper No(s)/Mail Date \_\_\_\_

**DETAILED ACTION**

***Priority***

1. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

***Drawings***

2. Figures 28-40 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). Corrected drawings in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

***Claim Rejections - 35 USC § 112***

3. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

4. Claims 2, 11 and 21 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

Each of claims 2 and 11 recites the limitation "a mobilization regional portion"; however, it is not clear as to where the mobilization regional portion is located at. The specification does

not describe in detail about this portion. Therefore, it is not clear as to how to make and use of the invention.

Claim 21 recites the limitation "polarizing direction changing means interposed between the splitting means and the light receiving means"; however, none of the drawings show such arrangement of the polarizing direction changing means. The polarizing direction changing means is depicted with reference number 66. According to Fig. 18, the polarizing direction changing means is interposed between the splitting means 25 and the objective lens. In Figs. 22 and 23, the polarizing direction changing means is interposed between the protective glass 71 and the splitting means 25. Therefore, the disclosure requires undue experimentation as to how to make and use the invention.

For the purpose of this office action, claim 21 is being interpreted as "polarizing direction changing means interposed between the splitting means and the light collecting means".

5. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

6. Claims 2, 3, 11, 12 and 19 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 2 recites the limitation "the other recording layers" in line 5 and 8. There is insufficient antecedent basis for this limitation in the claim.

Claim 3 recites the limitation "the other recording layers in lines 4-5. There is insufficient antecedent basis for this limitation in the claim.

Claim 11 recites the limitation "the other recording layer" in line 5 and 8. There is insufficient antecedent basis for this limitation in the claim.

Claim 12 recites the limitation "the other recording layer" in line 4. There is insufficient antecedent basis for this limitation in the claim.

Claim 19 recites the limitation "the lights" in line 3 and 4. There is insufficient antecedent basis for this limitation in the claim.

Furthermore, claim 19 recites "transmitting the emitted light from the light source and the reflected light from the recording medium without splitting the light by the splitting means". However, it is noted that this limitation contradicts the disclosure and/or the limitation set forth in claim 10, which requires that the reflected light from the recording medium is split by the splitting means (see par. [0190] of the published document of the application, US 2006/0262695). Therefore, the subject matter in this claim is indefinite.

For the purpose of this office action, claim 19 is being interpreted as "transmitting the emitted light from the light source without splitting the light by the splitting means".

***Claim Rejections - 35 USC § 102***

7. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

8. Claims 1-3, 5, 8-12, 14, 17, 18, 20 and 22 are rejected under 35 U.S.C. 102(e) as being anticipated by Nakayama et al. (US 7,359,295; hereafter Nakayama).

Applicant cannot rely upon the foreign priority papers to overcome this rejection because a translation of said papers has not been made of record in accordance with 37 CFR 1.55. See MPEP § 201.15.

Regarding claim 1:

Nakayama discloses an optical pickup apparatus for recording and/or reproducing main information by irradiating with light a recording medium formed of a plurality of recording layers (see Fig. 16 and Abstract), the optical pickup apparatus comprising:

a light source (see Fig. 16; the optical pickup apparatus includes a light source);

light collecting means for collecting emitted light emitted from the light source onto one recording layer of the recording medium (see Fig. 16; the optical pickup apparatus includes a light collecting means; for example, see Fig. 1, element 7), the light collecting means being provided so as to be displaceable in a variable direction perpendicular to an optical axis of the emitted light within a movable range including a neutral position centering on the optical axis of the emitted light led to the light collecting means, and by the displacement in the movable direction, changing a light collection position in the recording medium of the emitted light (see col. 2, lines 20-35; Nakayama discloses at least detecting the lens position information and the focus error signal; these signals are used to adjust lens in a direction perpendicular to an optical axis and a focusing direction);

light receiving means for receiving reflected light reflected by the recording medium (see Fig. 10), the light receiving means having first and second light receiving portions for obtaining track position information which is information of the light collection position of the emitted light with respect to a direction parallel to the recording layer, and shift information of the light

collecting means from the neutral position (see col. 8, line 51 to col. 9, line 3; first light receiving portion corresponds to the light detection portion e, c and g in Fig. 10; second light receiving portion corresponds to the light detection portion f, d and h in Fig. 10), and a third light receiving portion for obtaining focus position information which is information of the light collection position of the emitted light with respect to a direction perpendicular to the recording layer (third light receiving portion corresponds to light detection portion a and b in Fig. 10; also, see col. 8, line 60);

splitting means having a first splitting portion, a second splitting portion, and a third splitting portion (see Fig. 9, element 20; portion C, D and AB corresponds to the first splitting portion, the second splitting portion and the third splitting portion, respectively), for leading the reflected light via the light collecting means and splitting the reflected light on the respective first to third splitting portions, the first splitting portion leading the reflected light to the first light receiving portion, the second splitting portion leading the reflected light to the second light receiving portion, the third splitting portion leading the reflected light to the third light receiving portion, the first and second splitting portions being disposed in a residual region excluding an axial vicinity portion in a vicinity of a splitting axial line corresponding to an optical axis of the reflected light led to the splitting means when the light collecting means is located at the neutral position (see Fig. 9; the portions C and D do not include an axial vicinity portion); and

control means for obtaining the track position information and shift information by a result of light reception by the light receiving means and, controlling the light collection position of the emitted light in the recording medium by controlling a position of the light collecting means based on the track position information and shift information (see Fig. 16, element 56; the

servo unit 56 calculates the signals TES and LPS as defined in col. 8, line 64 and col. 9, line 3 to accurately control the position of the objective lens).

Regarding claim 2:

Nakayama discloses the optical pickup apparatus of claim 1, wherein in the splitting means, the axial vicinity portion is formed in a region including a mobilization regional portion at the time that a radiation range of the reflected light reflected by the other recording layers is displaced along with the displacement of the light collecting means, in a case where the radiation range of the reflected light reflected by the other recording layers except for the one recording layer is smaller than a radiation range of the reflected light reflected by the one recording layer (see Fig. 9; the mobilization regional portion is the central region of the splitting means; also, see col. 8, lines 35-49; beam spot 11 is reflected from the other recording layer, and beam spot 10 is reflected from the one recording layer).

Regarding claim 3:

Nakayama discloses the optical pickup apparatus of claim 1 or 2, wherein in a case where the light collection position of the emitted light is located on the one recording layer, the reflected light reflected by the other recording layers is irradiated onto the splitting means in the radiation range which is smaller than that of the reflected light reflected by the one recording layer (see Fig. 9 and col. 8, lines 35-49).

Regarding claim 5:

Nakayama discloses the optical pickup apparatus of any one of claims 1 to 3, further comprising diffracting means interposed between the light source and the light collecting means (see Fig. 5, element 103), for partly diffracting the emitted light, and forming a main beam for



obtaining the main information recorded on the recording medium, and a sub beam for obtaining the position information for controlling the light collection position of the main beam (see col. 2, lines 56-65).

Regarding claim 8:

Nakayama discloses the optical pickup apparatus of any one of claims 1, 2, 3, and 5, wherein the control means obtains the track position information in accordance with a differential push pull method based on the result of the light reception by the first light receiving portion and the result of the light reception by the second light receiving portion, and controls the position of the light collecting means, and thereby the light collection position of the emitted light in the recording medium is controlled (see the Abstract).

Regarding claim 9:

Nakayama discloses the optical pickup apparatus of any one of claims 1, 2, 3, 5 and 8, wherein the axial vicinity portion is a circular portion having a splitting axial line as a center (see Fig. 9).

Regarding claims 10-12, 14, 17 and 18:

Claims 10-12, 14, 17 and 18 recite similar limitations as in claims 1-3, 5, 8 and 9, respectively. Hence, claims 10-12, 14, 17 and 18 are rejected under the same reasons set forth in claims 1-3, 5, 8 and 9.

Regarding claim 20:

Nakayama discloses the light emitter of any one of claims 10-12, 14, 17 and 18, wherein the light emitter further comprises light guiding means interposed between the light source and the light collecting means, the light guiding means leading the emitted light emitted from the

light source to the light collecting means without splitting the emitted light, and leading the reflected light reflected by the recording medium to the splitting means (see Fig. 5; element 106 corresponds to the light guiding means).

Regarding claim 22:

Claim 22 recites similar limitations as in claim 1; hence, claim 20 is rejected under the same reason set forth in claim 1.

***Claim Rejections - 35 USC § 103***

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

10. Claims 4 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nakayama et al. (US 7,359,295; hereafter Nakayama) in view of Baba et al. (US 6,760,296; hereafter Baba).

Regarding claim 4:

Nakayama discloses the optical pickup apparatus or the light emitter is capable of reading DVD. Nakayama fails to disclose what wavelength the light source emits. However, it is well known in the art that the central wavelength of light for reproducing DVD is within a wavelength range of 650 nanometer or more and 660 nanometer or less. For example, see Baba, col. 3, lines 8-10.

At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to adapt a central wavelength that is within wavelength range of 650 nanometer or

more and 660 nanometer or less. One of ordinary skill in the art would have been motivated to do this because it is the standard wavelength range used for reproducing DVD.

Regarding claim 13:

Claim 13 recites similar limitations as in claim 4; hence, claim 13 is rejected under the same reason set forth in claim 4.

11. Claims 6, 7, 15 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nakayama et al. (US 7,359,295; hereafter Nakayama) in view of Ohnishi et al. (US 2002/0141301; hereafter Ohnishi).

Regarding claim 6:

Nakayama discloses the control means controls the position of the light collecting means based on the focus position information, and thereby the light collection position of the emitted light in the recording medium is controlled (see par. [0092] and the formula of FES).

Nakayama does not state what type of method is used for determining the focus position information. However, Ohnishi discloses that a knife edge method is conventionally used as a method to detect focus position information (see par. [0003]).

Therefore, at the time the invention was made, it would have been obvious to a person of ordinary skill in the art to adopt the use of the knife edge method to obtain focus position information since the knife edge method is commonly used for that purpose. It would have been a matter of design choice to select knife edge method for obtaining the focus position information.

Regarding claim 7:

Nakayama disclose the control means control the position of the light collecting means, and thereby the light collecting position of the emitted light in the recording medium is controlled (see par. [0093] and the formula of TES).

Nakayama does not state whether the control means obtains the track position information in accordance with a phase contrast method. However, Ohnishi discloses that a phase contrast method is conventionally used as a method to detect track position information (see par. [0047]).

Therefore, at the time the invention was made, it would have been obvious to a person of ordinary skill in the art to adopt the use of the phase contrast method to obtain track position information since the phase contrast method is commonly used for that purpose. It would have been a matter of design choice to select phase contrast method for obtaining the track position information.

Regarding claims 15 and 16:

Claims 15 and 16 recite similar limitations as in claims 6 and 7, respectively; hence, claims 15 and 16 are rejected under the same reason set forth in claims 6 and 7.

12. Claims 6, 7, 15 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nakayama et al. (US 7,359,295; hereafter Nakayama) in view of Baba et al. (US 6,760,296; hereafter Baba), and further in view of Ohnishi et al. (US 2002/0141301; hereafter Ohnishi).

When claims 6, 7, 15, and 16 depend claims 4 or 13, the combination of Nakayama, Baba and Ohnishi discloses all the features in claims 6, 7, 15 and 16 as according to the reasons set forth above.

13. Claims 19 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nakayama et al. (US 7,359,295; hereafter Nakayama) in view of Saimi et al. (US 6,430,137; hereafter Saimi)

Regarding claims 19 and 20:

Nakayama discloses all the features in claims 10-12, 14, 17 and 18; however Nakayama fail to mention whether the light emitter has a polarizing property.

On the contrary, Saimi discloses a light emitter, wherein the light emitter has a polarizing property of transmitting the emitted light from the light source without splitting the light by the splitting means, and splitting the light by the splitting means based on polarizing direction thereof (see Fig. 16 and col. 16, lines 30-57; only the return light is being split by the splitting means 109).

Also, Nakayama fails to disclose a polarizing direction changing means. However, Saimi discloses the light emitter comprising a polarizing direction changing means interposed between a light splitting means and a light collecting means, for changing a polarizing direction of the reflected light from the recording medium to a direction which is different from a polarizing direction of the emitted light from a light source (see Fig. 16; element 115 is the polarizing direction changing means; also, see col. 16, lines 37-49).

At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to modify the light emitter of Nakayama to have polarizing property and/or a polarizing direction changing means as suggested by Saimi. One of ordinary skill in the art would have been motivated to do this because the return light is polarized in a direction that is perpendicular to the polarization direction of the incoming light. By having such configuration,

the return light can be completely diffracted and irradiated onto the light receiving means. Hence, resulting a detection signal with high S/N ratio.

14. Claims 19 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nakayama et al. (US 7,359,295; hereafter Nakayama) in view of Baba et al. (US 6,760,296; hereafter Baba), and further in view of Saimi et al. (US 6,430,137; hereafter Saimi).

When claims 19 and 20 depend from claim 13, the combination of Nakayama, Baba and Saimi discloses all the features in claims 19 and 20 as according to the reasons set forth above.

15. Claims 19 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nakayama et al. (US 7,359,295; hereafter Nakayama) in view of Baba et al. (US 6,760,296; hereafter Baba) and/or Ohnishi et al. (US 2002/0141301; hereafter Ohnishi), and further in view of Saimi et al. (US 6,430,137; hereafter Saimi).

When claims 19 and 20 depend from claim 13 and/or claim 15 and 16, the combination of Nakayama, Baba, Ohnishi and Saimi discloses all the features in claims 19 and 20 as according to the reasons set forth above.

### ***Conclusion***

16. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Tsuda (US 2003/0016598) is cited to show a related art reference that teaches a splitting means having three regions.

Freeman (US 6,351,443) is cited to show a relation art reference that discloses detecting a portion of the light that excludes the axial region.

Tadano et al. (US 7,042,817) is cited because Tadano et al. show an detection aberration using knife edge method which uses a splitting means to direct the light into corresponding region of a photodetector.

Katayama (US 7,200,076) discloses a plurality of configuration for a light splitting means.

17. Any inquiry concerning this communication or earlier communications from the examiner should be directed to LIXI CHOW whose telephone number is (571)272-7571. The examiner can normally be reached on Mon-Fri, 8:30am to 6:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wayne Young can be reached on 571-272-7582. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Lixi Chow/  
Examiner, Art Unit 2627